Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of claims:

Claim 1 - canceled

2. (currently amended) A 1:N micro-electromechanical (MEM) switch module, comprising:

a substrate,

a signal input line on said substrate for receiving a signal to be switched, and

N MEM switches on said substrate, each of said switches having an input contact and an output contact on said substrate which are separated by a gap, and a movable contact which provides an electrically continuous signal path between said input and output contacts when said switch is actuated, each of said input contacts connected to said signal input line via respective switch input lines and each of said output contacts connected to respective signal output lines,

wherein each of said switch input lines has an associated effective capacitance, said switch input lines designed such that the inductance of each switch input line is matched to its effective capacitance at a given design frequency such that the impedance of each of said input lines is largely resistive at said design frequency.

3. (previously presented) The switch module of claim 2, wherein at least one of said signal output lines includes one or more open stub sections which effect the matching of said signal output line's inductance to its effective capacitance.

4. (currently amended) The switch module of claim 2, wherein said signal input line has a terminus point and each of said switch input lines is connected to said signal input line at said terminus point, all N of said MEM switches arranged such that they are rotationally symmetric ~~symmetrically~~ about said terminus point.

5. (original) The switch module of claim 4, wherein N = 4 and said MEM switches are arranged along four sides of a pentagon centered about said terminus point, said signal input line bisecting the fifth side of said pentagon en route to said terminus point.

6. (previously presented) The switch module of claim 2, wherein each of said MEM switches is an ohmic-contact switch which provides a conductive path upon closure.

7. (currently amended) The switch module of claim 2, ~~A 1:N micro-electromechanical (MEM) switch module, comprising:~~

~~a substrate,~~

~~a signal input line on said substrate for receiving a signal to be switched, and~~

~~N MEM switches on said substrate, each of said switches having an input contact and an output contact on said substrate which are separated by a gap, and a movable contact which provides an electrically continuous signal path between said input and output contacts when said switch is actuated, each of said input contacts connected to said signal input line via respective switch input lines and each of said output contacts connected to respective signal output lines,~~

wherein each of said MEM switches is a capacitive

switch which couples an applied signal between said input and output contacts through a thin insulator layer upon closure.

8. (previously presented) The switch module of claim 2, wherein each of said MEM switches is electrostatically-actuated with a respective drive voltage applied between said movable contact and at least one corresponding trace on said substrate.

9. (original) The switch module of claim 8, wherein said drive voltages are applied to at least some of said movable contacts using air bridges which traverse signal lines or traces on said substrate.

10. (previously presented) The switch module of claim 2, wherein each of said MEM switches is thermally-actuated.

11. (previously presented) The switch module of claim 2, wherein each of said MEM switches is piezoelectrically-actuated.

12. (previously presented) The switch module of claim 2, wherein each of said MEM switches is actuated with a respective drive voltage applied between said movable contact and at least one corresponding trace on said substrate, each of said corresponding traces connected to a via, said vias arranged symmetrically about said terminus point such that at least some of said vias are shared by adjacent ones of said MEM switches.

13. (previously presented) The switch module of claim 2, wherein the thickness of said substrate is 5-10 mils.

14. (previously presented) The switch module of claim 2, wherein said substrate comprises gallium arsenide (GaAs).

15. (previously presented) The switch module of claim 2, wherein said substrate comprises indium phosphide (InP).

16. (previously presented) The switch module of claim 2, wherein said substrate comprises silicon.

17. (previously presented) The switch module of claim 2, wherein said substrate comprises microwave-compatible ceramics.

18. (withdrawn) The switch module of claim 1, wherein first and second ones of said MEM switch modules form a phase shifter which includes N transmission lines having different lengths, each of said transmission lines connected at one end to a respective one of the signal output lines of said first switch module and at the other end to a respective one of the signal output lines of said second switch module, said switch modules operated such that an input signal applied to the signal input line of one of said switch modules is routed to the signal input line of the other of said switch modules via one of said transmission lines such that said input signal passes through two of said MEM switches.

19. (withdrawn) The switch module of claim 18, wherein N = 4, said phase shifter is a 2-bit phase shifter, and said four transmission lines are arranged to provide relative phase shifts of approximately 0°, 90°, 180° and 270°, respectively, to said input signal.

20. (withdrawn) The switch module of claim 18, wherein at least two of said phase shifters are cascaded to provide a greater number of distinct phase states.

21. (currently amended) A 1:4 micro-electromechanical (MEM) switch module, comprising:

a substrate,

a signal input line on said substrate for receiving a signal to be switched, said signal input line having a terminus point, and

four MEM switches on said substrate, each of said switches having an input contact and an output contact on said substrate which are separated by a gap, and a movable contact which provides an electrically continuous signal path between said input and output contacts when said switch is actuated, each of said input contacts connected to said signal input line at said terminus point via respective switch input lines and each of said output contacts connected to respective signal output lines,

said MEM switches arranged along four sides of a pentagon centered about said terminus point, said signal input line bisecting the fifth side of said pentagon en route to said terminus point,

each of said MEM switches actuated with a respective drive voltage applied between said movable contact and at least one corresponding trace on said substrate, each of said corresponding traces connected to a via, said vias arranged symmetrically about said terminus point such that at least some of said vias are shared by adjacent ones of said MEM switches,

each of said switch input lines having an associated effective capacitance, said switch input lines designed such that the inductance of each switch input line is matched to its effective capacitance at a given design frequency <u>such that the impedance of each of said input lines is largely resistive at said design frequency</u>.

22. (withdrawn) The switch module of claim 21, wherein first and second ones of said MEM switch modules form a 2-bit phase shifter which includes four transmission lines having different lengths, each of said transmission lines connected at one end to a respective one of the signal output lines of said first switch module and at the other end to a respective one of the signal output lines of said second switch module, said switch modules operated such that an input signal applied to the signal input line of one of said switch modules is routed to the signal input line of the other of said switch modules via one of said transmission lines such that said input signal passes through two of said MEM switches.

23. (withdrawn) The switch module of claim 22, wherein said four transmission lines provide relative phase shifts of approximately 0°, 90°, 180° and 270°, respectively, to said input signal.

24. (withdrawn) The switch module of claim 22, wherein at least two of said phase shifters are cascaded to provide a greater number of distinct phase states.

25. (withdrawn) An RF micro-electromechanical (MEM) phase shifter, comprising:

at least two 1:N micro-electromechanical (MEM) switch modules, each of which comprises:

a substrate,

a signal input line on said substrate for receiving a signal to be switched, and

N MEM switches on said substrate, each of said switches having an input contact and an output contact on said substrate which are separated by a gap, and a movable

contact which provides an electrically continuous signal path between said input and output contacts when said switch is actuated, each of said input contacts connected to said signal input line via respective switch input lines and each of said output contacts connected to respective signal output lines,

each of said switch input lines having an associated effective capacitance, said switch input lines arranged such that the inductance of each switch input line is matched to its effective capacitance,

N transmission lines having different lengths, each of said transmission lines connected at one end to a respective one of the signal output lines of a first switch module and at the other end to a respective one of the signal output lines of a second switch module, said switch modules operated such that an input signal applied to the signal input line of one of said switch modules is routed to the signal input line of another of said switch modules via one of said transmission lines such that said input signal is phase-shifted by predetermined amount and passes through two of said MEM switches.

26. (withdrawn) The phase shifter of claim 25, wherein said phase shifter is a 2-bit phase shifter comprising two switch modules having four MEM switches each, and said four transmission lines provide relative phase shifts of approximately 0°, 90°, 180° and 270°, respectively, to said input signal.

27. (withdrawn) The phase shifter of claim 25, wherein at least one of said signal output lines and/or transmission lines includes one or more open stub sections which effect the matching of said signal output line's inductance to its effective capacitance.

28. (withdrawn) The phase shifter of claim 25, wherein, for each of said switch modules, said signal input line has a respective terminus point and each of said input contacts is connected to said signal input line at said terminus point via respective ones of said switch input lines, all N of said MEM switches arranged symmetrically about said terminus point.

29. (withdrawn) The phase shifter of claim 28, wherein N = 4 and the MEM switches of each switch module are arranged along four sides of a pentagon centered about said module's terminus point, said signal input line bisecting the fifth side of said pentagon en route to said terminus point.

30. (withdrawn) The phase shifter of claim 25, wherein each MEM switch of each switch module is actuated with a respective drive voltage applied between its movable contact and at least one corresponding trace on said substrate, each of said corresponding traces connected to a via, said vias arranged symmetrically about said module's terminus point such that at least some of said vias are shared by adjacent ones of said MEM switches.

31. (withdrawn) An RF micro-electromechanical (MEM) phase shifter comprising first and second 1:4 MEM switch modules,

each of said switch modules comprising:

a substrate,

a signal input line on said substrate for receiving a signal to be switched, said signal input line having a terminus point, and

four MEM switches on said substrate, each of said switches having an input contact and an output contact on

said substrate which are separated by a gap, and a movable contact which provides an electrically continuous signal path between said input and output contacts when said switch is actuated, each of said input contacts connected to said signal input line at said terminus point via respective switch input lines and each of said output contacts connected to respective signal output lines,

said MEM switches arranged along four sides of a pentagon centered about said terminus point, said signal input line bisecting the fifth side of said pentagon en route to said terminus point,

each of said MEM switches actuated with a respective drive voltage applied between said movable contact and at least one corresponding trace on said substrate, each of said corresponding traces connected to a via, said vias arranged symmetrically about said terminus point such that at least some of said vias are shared by adjacent ones of said MEM switches,

each of said switch input lines having an associated effective capacitance, said switch input lines arranged such that the inductance of each switch input line is matched to its effective capacitance, and

four transmission lines having different lengths, each of said transmission lines connected at one end to a respective one of the signal output lines of said first switch module and at the other end to a respective one of the signal output lines of said second switch module, said switch modules operated such that an input signal applied to the signal input line of one of said switch modules is routed to the signal input line of the other of said switch modules via one of said transmission lines such that said input signal is phase-shifted by predetermined amount and passes through two of said MEM switches.

32. (withdrawn) The phase shifter of claim 31, further comprising additional ones of said 1:4 switch modules interconnected with said first and second switch modules such that additional transmission lines having lengths different from said four transmission lines are provided between first and second ones of said signal input lines.

33. (withdrawn) A 1:4 micro-electromechanical (MEM) switch module, comprising:

a substrate,

a signal input line on said substrate for receiving a signal to be switched, said signal input line having a terminus point, and

four MEM switches on said substrate, each of said switches having an input contact and an output contact on said substrate which are separated by a gap, and a movable contact which provides an electrically continuous signal path between said input and output contacts when said switch is actuated, each of said input contacts connected to said signal input line at said terminus point via respective switch input lines and each of said output contacts connected to respective signal output lines,

said MEM switches arranged along four sides of a pentagon centered about said terminus point, said signal input line bisecting the fifth side of said pentagon en route to said terminus point,

said signal output lines routed away from said module on the side of said module opposite said fifth side, to facilitate the interconnection of said signal output lines,

each of said MEM switches actuated with a respective drive voltage applied between said movable contact and at least one corresponding trace on said substrate, each of said

corresponding traces connected to a via, said vias arranged symmetrically about said terminus point such that at least some of said vias are shared by adjacent ones of said MEM switches,

each of said switch input lines having an associated effective capacitance, said switch input lines designed such that the inductance of each switch input line is matched to its effective capacitance at a given design frequency.

34. (withdrawn) The switch module of claim 33, wherein said signal input line and signal output lines are co-planar waveguides which transition to respective microstrips near said module.